



SAFETY DATA SHEET

- If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
- If Swallowed: Call a poison control center or doctor immediately for treatment. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Note: Probable mucosal damage may contraindicate the use of gastric lavage. Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

- Suitable / Unsuitable Extinguishing Media: Water only. Do not use dry extinguishers containing ammonium compounds. Use water to cool containers exposed to fire.
- Specific Hazards from Chemical: This product is chemically reactive with many substances. Any contamination of the product with other substances by spill or otherwise may result in a chemical reaction and fire. This product is an NFPA Class 3 Oxidizer which can cause a severe increase in fire intensity. Product is not known to be flammable, combustible or pyrophoric.
- Special Protective Equipment: See Section 8 for protective equipment for fire fighting.
- Other Information: This product is a strong oxidizer which is capable of intensifying a fire once started. Product is not known to be flammable, combustible or pyrophoric.

6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions: Response to a large quantity spill (100 pounds or greater) or when dusting or decomposition gas exposure could occur requires the use of a positive pressure full face supplied air respirator or self contained breathing apparatus (SCBA), chemical resistant gloves, coveralls and boots. In case of fire, this personal protective equipment should be used in addition to normal fire fighter equipment.
- Methods and Materials for cleanup: Air Release: Vapors may be suppressed by the use of water fog. All water utilized to assist in fume suppression, decontamination or fire suppression may be contaminated and must be contained before disposal and/or treatment.
- Water Release: This product is heavier than water. This material is soluble in water. Monitor all exit water for available chlorine and pH. Advise local authorities of any contaminated water release.
- Land Release: DANGER: All spills of this product should be treated as contaminated. Contaminated product may initiate a chemical reaction that may spontaneously ignite any combustible material present, resulting in a fire of great intensity. In case of a spill, separate all spilled product from packaging, debris and other material. Using a clean broom or shovel, place all spilled product into plastic bags, and place those bags into a clean, dry disposal container, properly marked and labeled. Disposal containers made of plastic or metal are recommended. Do not seal disposal containers tightly. Immediately remove all product in disposal containers to an isolated area outdoors. Place all damaged packaging material in a disposal container of water to ensure decontamination (i.e. removal of all product) before disposal. Place all undamaged packaging in a clean, dry container properly marked and labeled.
- Additional Spill Information : Hazardous concentrations in air may be found in local spill area and immediately downwind. Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration. REPORTABLE QUANTITY: 10 lbs. (as calcium hypochlorite) per 40 CFR 302.4.

7. HANDLING AND STORAGE

- Handling: Avoid inhalation of dust and fumes. Do not take internally. Avoid contact with skin, eyes and clothing. Upon contact with skin or eyes, wash off with water. Remove contaminated clothing and wash before reuse.
- Storage: Keep product tightly sealed in original containers. Store product in a cool, dry, well-ventilated area. Store away from combustible or flammable products. Keep product packaging clean and free of all contamination, including, e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc.
- Shelf Life Limitations: Do not store product where the average daily temperature exceeds 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products. Shelf life (that is, the period of time before the product goes below stated label strength) is determined by storage time and temperatures. Store in a cool, dry and well ventilated area. Prolonged storage at elevated temperatures will significantly shorten the shelf life. Storage in a climate controlled storage area or building is recommended in those areas where extreme high temperatures occur.
- Incompatible Materials for Storage: Do not allow product to come in contact with other materials, including



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e.g. other pool treatment products, acids, organic materials, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-ammonium phosphate), oxidizers, all corrosive liquids, flammable or combustible materials, etc. A chemical reaction with such substances can cause a fire of great intensity. Do not store at temperatures above an average daily temperature of 35° C / 95° F. Storage above this temperature may result in rapid decomposition, evolution of chlorine gas and heat sufficient to ignite combustible products.
(NFPA Oxidizer Class 3)

8. EXPOSURE CONTROLS / PERSONAL PROTECTIONS

OSHA permissible exposure limit: CALCIUM HYPOCHLORITE CAS NR.7778-54-3
ARCH-OEL*: 1 mg/m3 TWA
NIOSH-IDLH: 37 - 48 mg/m3 Conc based on IDLH concentration of chlorine

CALCIUM HYDROXIDE CAS NR. 1305-62-0
ACGIH: 5 mg/m3 TWA

*ARCH-OEL - Arch recommended Occupational Exposure Guideline

Appropriate Engineering Controls: Ventilation: Local exhaust ventilation or other engineering controls are normally required when handling or using this product to keep airborne exposures below the TLV, PEL or other recommended exposure limit.

Individual Protection Measures: Respiratory Protection : Wear a NIOSH approved respirator if levels above the exposure limits are possible.
Respirator Type : A NIOSH approved full-face air purifying respirator equipped with combination chlorine/P100 cartridges. Air purifying respirators should not be used in oxygen deficient or IDLH atmospheres or if exposure concentrations exceed ten (10) times the published limit.
Skin Protection : Wear impervious gloves to avoid skin contact. A full impervious suit is recommended if exposure is possible to a large portion of the body. A safety shower should be provided in the immediate work area.
Eye Protection: Use chemical goggles. Emergency eyewash should be provided in the immediate work area.
Protective Clothing Type: Neoprene, Nitrile, Natural rubber (This includes: gloves, boots, apron, protective suit)

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Free flowing white granules	Flammability (solid/gas):	Chemically reactive with many substances.
Odor:	Chlorine-like	Upper/lower Flammability or Exposure limits:	Not Applicable
Odor Threshold:	No data available	Vapor Pressure:	Not Applicable
pH:	10.4 - 10.8 @ 25°C (in 1% distilled water)	Vapor Density:	Not Applicable
Melting Point/Freezing Point:	Not Applicable	Density:	0.8g/cc
Initial Boiling Point/Boiling Range:	Not Applicable	Solubility(ies):	18% @ 25°C in water
Flash Point:	Not Applicable	Partition Coefficient: n-octanol/water:	No data available
Evaporation Rate:	Not Applicable	Auto-ignition Temperature:	Not Applicable
		Decomposition Temperature:	338 - 356°F (170 - 180°C)
		Viscosity:	No data available

10. STABILITY AND REACTIVITY

Stability/Reactivity: Product is not sensitive to mechanical shock or impact. Product is not sensitive to electrical static discharge. Product will not undergo hazardous polymerization. Product is an NFPA Class 3 oxidizer which can cause a severe increase in fire intensity. Not pyrophoric. Not an organic peroxide. If subjected to excessive temperatures, the product may undergo rapid decomposition, evolution of chlorine gas, and heat sufficient to ignite combustible substances. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter. Use copious amounts of water for fires involving this product.

Possibilities of Hazardous Reactions: Hazardous Polymerization: Will Not Occur.

Conditions to Avoid: Do not store next to heat source, in direct sunlight, or elevated storage temperature. Do not store where the daily average temperature exceeds 95°F. Prevent ingress of humidity and moisture into container or package. Always close the lid.

Incompatible Materials: This product is chemically reactive with many substances, including, e.g., other pool treatment products, acids, organics, nitrogen-containing compounds, dry powder fire extinguishers (containing mono-

ammonium phosphate), oxidizers, corrosive, flammable or combustible materials. Do not allow product to contact any foreign matter, including other water treatment products. Contamination or improper use may cause a fire of great intensity, explosion or the release of toxic gases. If product is exposed to small amounts of water, it can react violently to produce heat and toxic gases and spatter.

Hazardous Decomposition Materials: Chlorine.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

COMPONENT ANIMAL TOXICITY:

Oral LD50 value:

65% CALCIUM HYPOCHLORITE LD50 = 850 mg/kg Rat

SODIUM CHLORIDE LD50 = 3,000 mg/kg Rat

CALCIUM CHLORIDE LD50 = 1,000 mg/kg Rat

CALCIUM HYDROXIDE LD50 = 7,340 mg/kg Rat

Dermal LD50 value:

65% CALCIUM HYPOCHLORITE LD50 > 2,000 mg/kg Rabbit

SODIUM CHLORIDE LD50 > 10,000 mg/kg Rabbit

CALCIUM CHLORIDE LD50 = 2,630 mg/kg Rat

CALCIUM HYDROXIDE No data

Inhalation LC50 value:

65% CALCIUM HYPOCHLORITE Inhalation LC50 1 h, (Nose Only) = 2.04 mg/l Rat

65% CALCIUM HYPOCHLORITE Inhalation LC50 4 h, (Nose Only) = 0.51 mg/l Rat

SODIUM CHLORIDE Inhalation LC50 1 h > 42 mg/l Rat

CALCIUM CHLORIDE No data

CALCIUM HYDROXIDE No data

PRODUCT ANIMAL TOXICITY:

Oral LD50 value: LD50 Approximately 800 mg/kg Rat

Dermal LD50 value: LD50 > 2,000 mg/kg Rabbit

Inhalation LC50 1.00 h (Nose Only) > 2.04 mg/l Rat

Inhalation LC50 4 h (Nose Only) > 0.51 mg/l Rat

Skin Irritation: Dry material causes moderate skin irritation. Wet material causes skin burns.

Eye Irritation: Corrosive to eyes.

Skin Sensitization: This material is not known or reported to be a skin or respiratory sensitizer.

ACUTE TOXICITY: This product is corrosive to all tissues contacted and upon inhalation, may cause irritation to mucous membranes and respiratory tract. The dry material is irritating to the skin. However when wet, it will produce burns to the skin.

Chronic Toxicity:

There are no known or reported effects from repeated exposure except those secondary to burns.

Reproductive Toxicity:

Calcium hypochlorite has been tested for teratogenicity in laboratory animals. Results of this study have shown that calcium hypochlorite is not a teratogen.

Carcinogenicity:

This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP or EPA. One hundred mice were exposed dermally 3 times a week for 18 months to a solution of calcium hypochlorite. Histopathological examination failed to show an increased incidence of tumors. IARC (International Agency for Research on Cancer) reviewed studies conducted with several hypochlorite salts. IARC has classified hypochlorite salts as having inadequate evidence for carcinogenicity to humans and animals. IARC therefore considers hypochlorite salts to be not classifiable as to their carcinogenicity to humans (Group 3 Substance).

Mutagenicity:

Calcium hypochlorite has been tested in the Dominant lethal assay in male mice, and it did not induce a dominant lethal response. Calcium hypochlorite has been reported to produce mutagenic activity in two in vitro assays. It has, however, been shown to lack the capability to produce mutations in animals based on results from the micronucleus assay. In vitro assays frequently are inappropriate to judge the mutagenic potential of bactericidal chemicals due to a high degree of cellular toxicity. The concentration which produces mutations in these in vitro assays is significantly greater than the concentrations used for disinfection. Based on high cellular toxicity in in vitro assays and the lack of mutagenicity in animals, the risk of genetic damage to humans is judged not significant.



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12. ECOLOGICAL INFORMATION

Aquatic Toxicity: CALCIUM HYPOCHLORITE
Bluegill - 96 h LC50 0.057mg/l
Waterflea - 48 h LC50 0.067 mg/l

 CALCIUM CHLORIDE
Bluegill - 96 h LC50 = 10,650 mg/l
Waterflea - 48 h LC50= 2,400 mg/l

 SODIUM CHLORIDE
Goldfish - Acute Toxicity 10 d LC50 > 10,000 mg/l
Waterflea - Immobilization 48 h EC50 > 100 mg/l

 CALCIUM HYDROXIDE
Mosquito fish - Acute Toxicity 96 h LC50 160 mg/l

Avian Toxicity: CALCIUM HYPOCHLORITE
Bobwhite quail - Dietary LC50 > 5,000 ppm
Mallard ducklings - Dietary LC50 > 5,000 ppm
Bobwhite quail - Oral LD50 3,474 mg/kg

Environmental Hazards: This product is highly toxic to fish and other aquatic organisms. Do not discharge effluent containing this product into lakes, ponds, streams, estuaries, oceans or public waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

13. DISPOSAL CONSIDERATIONS

Disposal: CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES. Pesticide wastes may be hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the hazardous Waste representative at the EPA Regional Office for guidance.

 If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001. If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposals restrictions under 40 CFR 268 and must be managed accordingly.

 Disposal Methods : As a hazardous solid waste it should be disposed of in accordance with local, state and federal regulations.

 Potential US EPA Waste Codes : D001

14. TRANSPORTATION INFORMATION

Package exceptions may be applicable. Refer to the appropriate IMDG, IATA and/or 49 CFR regulations accordingly.

DOT: RQ, UN2880, Calcium Hypochlorite, Hydrated Mixture, 5.1, PG II or RQ, UN2880, Calcium Hypochlorite, Hydrated, 5.1, PG II

15. REGULATORY INFORMATION

TSCA: USA: Reported in the EPA TSCA Inventory.

SARA (311, 312): Health: Immediate (Acute) Health Hazard
 Physical: Fire Hazard

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Right To Know Hazardous Substance List: California - This product is not listed on California Prop 65.
 Massachusetts - Calcium Chlorate, Calcium Hydroxide, Calcium Hypochlorite, Calcium Carbonate.
 New Jersey - Calcium Chloride, Calcium Chlorate, Calcium Dihydroxide, Calcium Hypochlorite, Calcium Carbonate, Sodium Chloride.
 Pennsylvania - Calcium Chloride, Calcium Chlorate, Calcium Dihydroxide, Calcium Hypochlorite, Calcium



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Carbonate, Sodium Chloride.

Waste Classification: Waste Disposal Summary : If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D001. If this product becomes a waste, it will be a hazardous waste which is subject to the Land Disposal restrictions under 40 CFR 268 and must be managed accordingly.

Workplace Classification: This product is considered hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).

CERCLA Reportable Quantity: CALCIUM HYPOCHLORITE : 10 lbs.

EPA NOTES:

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. The pesticide label also includes other important information, including directions for use. Following is the hazard information as required on the pesticide label:

SIGNAL WORD: DANGER

PRECAUTIONARY STATEMENTS: HAZARDS TO HUMANS AND DOMESTIC ANIMALS: DANGER. Highly corrosive. Causes skin and eye damage. May be fatal if swallowed. Do not get in eyes, on skin or on clothing. Do not handle with bare hands. Irritating to nose and throat. Wear rubber gloves and protective eyewear such as goggles, face shield, or safety glasses. Do not breathe dust and fumes. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

PHYSICAL AND CHEMICAL HAZARDS: CONTAMINATION MAY CAUSE FIRE OR EXPLOSION! MIX ONLY INTO WATER. **DANGER: STRONG OXIDIZING AGENT:** Mix only with water. Use clean, dry utensils. Do not add this product to any dispensing device containing remnants of any other product. Such use may cause a violent reaction leading to fire or explosion. Contamination with moisture, organic matter, or other chemicals will start a chemical reaction with generation of heat, chlorine gas and possible generation of fire and explosion. In case of contamination or decomposition, do not reseal container. If possible, isolate container in open air or well ventilated area. Flood with large volumes of water if necessary. **FIRE OR EXPLOSION COULD RESULT FROM IMPROPER USE.**

ENVIRONMENTAL HAZARDS: This pesticide is toxic to fish and aquatic organisms.

NSF Information:



Maximum use for potable water is 15 mg/L.

16. OTHER INFORMATION

ALWAYS COMPLY WITH ALL APPLICABLE INTERNATIONAL, FEDERAL, STATE AND LOCAL REGULATIONS REGARDING THE TRANSPORTATION, STORAGE, USE AND DISPOSAL OF THIS CHEMICAL. Due to the changing nature of regulatory requirements, the REGULATORY INFORMATION listed in Section 15 of this document should NOT be considered all-inclusive or authoritative. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements. The information in this SDS was obtained from sources, which we believe are reliable. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS. The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

HMIS Rating: No data available

NFPA Rating: Health: 3
Flammability: 0
Reactivity: 1

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Special Hazard Warning: OX - Oxidizer